IN THE CLAIMS

1. (currently amended) A wavelength to optical power converter used for monitoring the wavelength and the optical power in a fiber-optic communication system, comprising:

an input fiber pigtail for inputting an optical wavelength signal;

a cylinder for fixing said spiral fiber;

a spiral fiber connected to said input fiber pigtail and wrapped around said fixed radius of said cylinder;

~~a cylinder for fixing said spiral fiber;~~

an output fiber pigtail extended from said spiral fiber; and

an optical detector connected to said output fiber pigtail for reading a signal from said output fiber pigtail to generate said optical power, wherein said fixed radius of said cylinder is smaller than 10 mm when said optical wavelength signal is in the range between 750 nm and 1300 nm, and said fixed radius of said cylinder is more than 10 mm when said optical wavelength signal is in the range between 1300 nm and 1750 nm, and wherein said spiral fiber outputs said optical power in response to said optical wavelength signal, thereby performing a conversion from said wavelength into said optical power.

2. (currently canceled)

3. (currently canceled)

4. (original) The wavelength to optical power converter according to Claim 1, wherein said optical wavelength signal includes a wave-band range between 750 nm and 1750 nm.

5. (original) The wavelength to optical power converter according to Claim 1, wherein said optical wavelength signal is a monochromatic light source having a wave-

band range between 750 nm and 1750 nm.

6. (original) The wavelength to optical power converter according to Claim 1, wherein said optical detector is an optical power reading device.

7. (original) The wavelength to optical power converter according to Claim 1, further comprising a fluorescent sensing head and an optical sensor to form a medical sensor of a medical sensing system.

8. (original) The wavelength to optical power converter according to Claim 1, further comprising a tunable light source, an optical sensor and a feedback control system of said optical power to form a stabilizing frequency network of a stabilized frequency system of a Wavelength Division Multiplexing (WDM) network.

9. (original) The wavelength to optical power converter according to Claim 1, further comprising a tunable light source, an optical sensor and a processor with a corresponding relationship between said optical power and said wavelength to form a wavelength detecting system of a Wavelength Division Multiplexing (WDM) network for measuring said wavelength and monitoring said WDM network.

10. (original) The wavelength to optical power converter according to Claim 1, further comprising a Wavelength Division Multiplexing (WDM) multiplexer, an optical access multiplexer, a Wavelength Division Multiplexing (WDM) demultiplexer, a first attenuator and a second attenuator and two Erbium-doped fiber amplifiers (EDFAs) to form a network attenuator of a Wavelength Division Multiplexing (WDM) network.

11. (currently amended) A method for converting a wavelength into an optical power used in a wavelength to optical power converter of a fiber-optic communication system, wherein said wavelength to optical power converter includes an input fiber

pigtail, a cylinder having a fixed radius, a spiral fiber wrapped around said fixed radius of said cylinder, ~~a cylinder,~~ an output fiber pigtail and an optical detector, comprising the steps of:

inputting a specific wave-band monochromatic light source to said input fiber pigtail;

measuring a bending loss of said spiral fiber;

regulating a specific parameter and calculating a theory curve; and

reading a signal via said optical detector to generate an optical power output signal, wherein said fixed radius of said cylinder is smaller than 10 mm when said optical wavelength signal is in the range between 750 nm and 1300 nm, and said fixed radius of said cylinder is greater than 10 mm when said optical wavelength signal is in the range between 1300 nm and 1750 nm.

12. (original) The method according to Claim 11, wherein said specific wave-band monochromatic light source is in the range between 750 nm and 1750 nm.

13. (original) The method according to Claim 11, wherein said specific parameter includes a bending radius, a winding number and a fiber-optic specification.

14. (original) The method according to Claim 13, wherein said fiber-optic specification includes an admitted level of a fiber-optic to said bending loss thereof which is a variation of said bending loss against different spatial interferences.

15. (original) The method according to Claim 13, wherein said theory curve is a mathematical equation which is a simulated semi-empirical theory curve obtained by getting actual input/output (I/O) values of said fiber-optic communication system and regulating said specific parameter for showing a conversion relationship between said wavelength and said optical power in different input/output (I/O) values.

16. (original) The method according to Claim 15, wherein said mathematical equation is a general formula of $L(W)=\zeta_1 W^3 + \zeta_2 W^2 + \zeta_3 W + \zeta_4$, wherein $L(W)$ is a bending loss value, W is an input wavelength and $\zeta_{i(i=1,2,3,4)}$ is a specific parameter when said input wavelength is in the range between 750 nm and 1300 nm, and is a general formula of $L(W)=\zeta_1 N\ exp(\theta_N + \zeta_2 W - \zeta_3 R)$, wherein $L(W)$ is a bending loss value, W is an input wavelength, $\zeta_{i(i=1,2,3)}$ is a specific parameter, R is a bending radius, N is a winding number and θ_N is a winding angle when said input wavelength is in the range between 1300 nm and 1750 nm.

17. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said input wavelength which is $L(W)= -2.118 \times 10^{-8} W^3 + 7.6504 \times 10^{-4} W^2 — 0.0936W + 39.2805$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 3 and said bending radius is 12.5 mm.

18. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = -4.3102 \times 10^{-8} W^3 + 1.4356 \times 10^{4} W^2 - 0.1653W + 64.0322$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 5 and said bending radius is 12.5 mm.

19. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W)= -1.9511 \times 10^{-10} W^3 - 8.3908 \times 10^{7} W^2 - 0.0014W + 0.9694$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 10 and said bending radius is 12.5 mm.

20. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = -2.3069 \times 10^{-8} W^3 + 8.2415 \times 10^{-5} W^2 - 0.0996W + 41.1952$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 3 and said bending radius is 6.8 mm.

21. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = -2.2554 \times 10^{-8} W^3 + 8.1316 \times 10^{-5} W^2 - 0.0993W + 41.5358$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 5 and said bending radius is 6.8 mm.

22. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = 2.7325 \times 10^{-8} W^3 + 9.6101 \times 10^{-5} W^2 - 0.1142W + 46.6043$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 7 and said bending radius is 6.8 mm.

23. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said betiding loss and said wavelength which is $L(W) = -2.29 \times 10^{-8} W^3 + 8.1705 \times 10^{-5} W^2 - 0.0989W + 41.1294$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 10 and said bending radius is 6.8 mm.

24. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = -1.6393 \times 10^{-8}W^3 + 6.2443 \times 10^{-5}W^2 - 0.0803W + 35.2693$, wherein $L(PV)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 13 and said bending radius is 6.8 mm.

25. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = -1.7899 \times 10^{-8}W^3 + 6.6879 \times 10^{-5}W^2 - 0.0843W - 36.3340$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 15 and said bending radius is 6.8 mm.

26. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said bending loss and said wavelength which is $L(W) = -2.2137 \times 10^{-8}W^3 + 7.9569 \times 10^{-5} W^2 - 0.0969W + 40.4603$, wherein $L(W)$ is a bending-loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 18 and said bending radius is 6.8 mm.

27. (original) The method according to Claim 15, wherein said conversion relationship between said wavelength and said optical power is a mathematical equation of a relative curve of said loss and said light source wavelength which is $L(W) = -3.3952 \times 10^{-8}W^3 + 1.1996 \times 10^{-4}W^2 - 0.1438W + 59.2077$, wherein $L(W)$ is a bending loss value, W is an input wavelength when said input wavelength is in the range between 750 nm and 1300 nm, said winding number is 20 and said bending radius is 6.8 mm.

28. (currently amended) A wavelength to optical power converter used for

measuring a wavelength, comprising:

an input fiber pigtail for inputting an optical wavelength signal;

a cylinder for fixing said spiral fiber;

a spiral fiber connected to said input fiber pigtail and wrapped around said fixed radius of said cylinder;

~~a cylinder for fixing said spiral fiber;~~

an output fiber pigtail extended from said spiral fiber; and

an optical detector connected to said output fiber pigtail for reading a signal from said output fiber pigtail to generate ~~an~~ said optical power, wherein said fixed radius of said cylinder is smaller than 10 mm when said optical wavelength signal is in the range between 750 nm and 1300 nm, and said fixed radius of said cylinder is more than 10 mm when said optical wavelength signal is in the range between 1300 nm and 1750 nm and said spiral fiber outputs said optical power in response to said optical wavelength signal, thereby performing the conversion from said wavelength into said optical power.